

Listing of Claims:

Claim 1-53. (Cancelled)

Claim 53. (Previously Presented) A method for preventing or reducing the severity of kidney damage in a human or veterinary patient to whom a potentially nephrotoxic substance is to be administered, said method comprising the steps of:

providing a heat exchange catheter that has a heat exchanger which is positionable within a blood vessel of the patient and a controller that controls the temperature of the heat exchanger;

positioning the heat exchanger in the inferior or superior vena cava of the patient without entirely preventing the flow of blood around the heat exchanger; and

controlling the temperature of the heat exchanger to reduce the temperature of the patient's blood and to cool the patient's kidneys, thereby preventing or reducing the severity of kidney damage resulting from the substance; and

administering the substance to the patient.

Claim 54. (Previously Presented) The method of claim 53, wherein the patient's kidneys are cooled prior to the administration of the substance to the patient.

Claim 55. (Previously Presented) The method of claim 53, wherein the patient's kidneys are cooled during the administration of the substance to the patient.

Claim 56. (Previously Presented) The method of claim 53, wherein the patient's kidneys are cooled after the administration of the substance to the patient.

Claim 57. (Previously Presented) The method of claim 53, further comprising the step of maintaining the reduction in temperature during the administration of the substance to the patient.

Claim 58. (Previously Presented) The method of claim 53, further comprising a step of disrupting the laminar flow of blood around the heat exchange catheter.

Claim 59. (Previously Presented) The method of claim 58, wherein the laminar flow of blood is disrupted by one or more fins provided on the heat exchange catheter.

Claim 60. (Previously Presented) The method of claim 53, wherein the heat exchange catheter is positioned in the patient's venous vasculature.

Claim 61. (Previously Presented) The method of claim 53 wherein the substance causes ischemic injury to the kidney and wherein the patient's kidneys are cooled to a temperature that reduces ischemic injury.

Claim 62. (Previously Presented) The method of claim 53 wherein the patient's temperature is reduced to a temperature between 32 degrees Celsius and 37 degrees Celsius.

Claim 63. (Previously Presented) The method of claim 53, further comprising a step of administering an anti-shivering treatment to the patient.

Claim 64. (Previously Presented) The method of claim 63, wherein the anti-shivering treatment is an anti-shivering agent selected from the group consisting of: dopamine receptor blockers; dopamine receptor agonists; kappa opioid receptor agonists; opioid agonist-antagonist analgesics; serotonin 5HT_{1a} receptor agonists; and their pharmaceutically acceptable salts.

Claim 65. (Previously Presented) The method of claim 53, further comprising a step of monitoring the temperature of the patient.

Claim 66. (Previously Presented) The method of claim 53, further comprising steps of:

monitoring the temperature of the patient; and

adjusting the temperature of the heat exchange catheter based on the temperature so monitored.

Claim 67. (Previously Presented) The method of claim 53 wherein the substance comprises a radiographic contrast medium.

Claim 68. (Previously Presented) The method of claim 67 wherein the step of administering the substance to the patient comprises injecting the radiographic contrast medium into the vasculature of the patient.

Claim 69. (Previously Presented) The method of claim 53 further comprising the step of:

diagnosing in the patient a pre-existing renal disorder or other condition that renders the patient at greater than normal risk for suffering clinically significant renal damage due to administration of the substance.